

Claims

- [c1] A flowmeter comprising:
instantaneous flow rate detection means for detecting an instantaneous flow rate of fluid;
filter processing means for removing a pulse flow rate component of the instantaneous flow rate of the fluid by digital filter-processing the instantaneous flow rate of the fluid which is detected by the instantaneous flow rate detection means; and
stable flow rate calculation means for calculating a stable flow rate of the fluid based on an output from the filter processing means.
- [c2] A flowmeter according to claim 1, further comprising fluctuation determination means for determining whether the instantaneous flow rate of the fluid pulses or not,
wherein, when the fluctuation determination means determines that the instantaneous flow rate of the fluid pulses, the stable flow rate calculation means calculates a stable flow rate of the fluid based on an output from the filter processing means.
- [c3] A flowmeter according to claim 2, wherein the fluctua-

tion determination means determines whether the instantaneous flow rate of the fluid pulses or not, by determining whether or not a variation amplitude of the instantaneous flow rate of the fluid is equal to or greater than a predetermined value.

[c4] A flowmeter according to claim 1, wherein the filter processing means modifies a filter characteristic according to a variation amplitude of the instantaneous flow rate of the fluid.

[c5] A flowmeter according to claim 1, wherein, when the instantaneous flow rate of the fluid which is detected by the instantaneous flow rate detection means is lower than a predetermined flow rate, the filter processing means removes a pulse component of the instantaneous flow rate of the fluid.

[c6] A flowmeter according to claim 1, wherein the filter processing means modifies a filter characteristic according to the instantaneous flow rate of the fluid.

[c7] A flowmeter according to claim 1, wherein the filter processing means modifies a filter characteristic according to an interval of measurement times of the instantaneous flow rate detection means.

[c8] A flowmeter according to claim 7, wherein, when the

flow rate is high, the filter processing means modifies a filter characteristic such that a cut-off frequency of the filter characteristic becomes high, and when the flow rate is low, the filter processing means modifies the filter characteristic such that the cut-off frequency of the filter characteristic becomes low.

- [c9] A flowmeter according to claim 1, wherein the filter processing means modifies a filter characteristic such that a variation amplitude of the stable flow rate calculated by the stable flow rate calculation means is within a predetermined value range.
- [c10] A flowmeter according to claim 1, wherein the instantaneous flow rate detection means detects the instantaneous flow rate by using an ultrasonic wave.
- [c11] A flowmeter according to claim 1, wherein the instantaneous flow rate detection means detects the instantaneous flow rate by using heat.